Men and Books

F. J. SHEPHERD AS ANATOMIST*

BY I. MACLAREN THOMPSON, B.Sc., M.B., CH.B.(EDIN.)

Professor of Anatomy, University of Manitoba, Winnipeg

In 1934 appeared an interesting biography of F. J. Shepherd, Surgeon, by Dr. W. B. Howell (Toronto and Vancouver, J. M. Dent & Sons, Ltd.), which has been drawn upon in preparing parts of this essay. The book gives a spirited pen-picture of Shepherd as a teacher of anatomy, from the viewpoint of his students, who are accustomed to think and speak of him as a great anatomist. That he was an outstanding teacher of anatomy is clear; but Dr. Howell has not professed to do what only an anatomist could do, namely, survey Shepherd's contributions to anatomical scholarship and indicate their significance. The present paper is primarily an attempt to do this, in the setting of a brief survey of his life and work. It has seemed worth doing, because Shepherd was, I think, the first Canadian professor of anatomy to gain international recognition. I knew Dr. Shepherd slightly in his retirement, during the years when I worked in the anatomical laboratories and museum designed by him at McGill University; among colleagues and friends most of whom were his pupils; I could not fail to feel his influence and become interested in him. In attempting to assess the significance of his work, however, I think that I may be regarded as a disinterested person.

Francis J. Shepherd was born near Montreal in 1851, and graduated in medicine at McGill in 1873. He immediately crossed to London, and spent the winter of 1873-74 attending various clinics, and doing some anatomy in preparation for the M.R.C.S. examinations, which he passed in the summer of 1874. That autumn he visited Edinburgh, where he observed Lister's technique; then he went to Marburg for a short time, and on to Vienna, where he pursued an extensive program of typical post-graduate studies in both preclinical and clinical subjects. By this time he had reached the intention of entering the Indian Medical Service. But during his student days at McGill Shepherd had developed a friendship, which proved life-long, with one afterwards (according to Dr. Howell) described by him as a "keen-eyed, alert, spare young man with an enormous amount of energy," named William Osler. Having obtained his medical degree from McGill in 1872, Osler in 1875 was Professor of the Institutes of Medicine at his Alma Mater, and was on the staff of the Montreal General Hospital. Already he was developing his penchant for "stirring things up" for the better. On New Year's Day, 1875, he wrote to Shepherd at Vienna, suggesting that he consider the approaching vacancy in the demonstratorship of anatomy at McGill, and that in this connection he "would be wise in paying some attention to practical anatomy in Vienna and attend the lectures of Hyrtl's successor—whoever he is." In April the McGill Faculty of Medicine appointed Shepherd to the Demonstratorship (part-time). He accepted, and settled down to anatomy and practice in Montreal in 1875. He became demonstrator under his former teacher, Professor W. E. Scott, one of whose students, Dr. M. A. Craig, of Lakeport, California, remarked some time ago at a McGill dinner in San Francisco: "You could as easily drive a horse and cart down the lacrimal duct as 'get by' Dr. Scott if you didn't know the circle of Willis!" Shepherd's vigorous character immediately asserted itself, as thus related by Dr. Howell: "When the college opened he entered upon his duties as demonstrator of anatomy with an enthusiasm which must have appeared to the members of the Faculty a little uncalled for. . . But a new era had begun. Shepherd was bent on introducing the methods he had seen in operation abroad. . . Scott, who had had nothing to move him out of his rut for twenty-five years, resented the new methods. There was friction between the two men, but Shepherd, young, energetic, and aggressive, bore down all opposition." Upon Scott's death in 1883 Shepherd succeeded him as Professor of Anatomy, and occupied the chair until 1913, a span of thirty years. He died in 1929.

In 1893 Osler had been four years at the Johns Hopkins Hospital in Baltimore, the Medical School was about to open, and an anatomist of distinction was wanted for the professorship. What more natural than that Osler's thoughts should turn toward his old friend Shepherd, who had then been some ten years in the chair at McGill? Thus we find the following remarks in a letter from Osler to his former resident at Hopkins, Dr. H. A. Lafleur, who had returned to Montreal; this letter (quoted in Cushing's "Life of Sir William Osler") was dated January 12, 1893. "We have the chairs of Anatomy and Pharmacology to fill, and shall need someone in physiological chemistry. We hope to be able to secure Mall in anatomy. . . P.S. Do you think Shepherd would come here in anatomy? There would of course be no hospital appointment. He combines surgical and scientific anatomy as well. Mall has a comfortable berth in Chicago and I doubt if he can come."

* Read before the Medical History Club, Winnipeg, October 28, 1937.

I have found no record of Shepherd's feeling about this.

Many of Shepherd's contributions to surgical literature contain incidental anatomical matter; some thirty of his publications I should regard as primarily anatomical, or significant anatomically. About a dozen of these, including his first publication (on abnormalities observed during his first session as demonstrator of anatomy), and his last anatomical paper (on an anomalous muscle in the thorax), consisted of factual records of anatomical anomalies. These papers appeared in the *Canadian Medical and Surgical Journal,* vol. 5; the *Montreal General Hospital Reports,* vol. 1; the *Annals of Anatomy and Surgery,* vols. 4, 6, 8; the *Medical News,* vol. 42; the *Report of the British Association for the Advancement of Science,* 1884; the *Montreal Medical Journal,* vol. 17; the *Annals of Surgery,* vol. 9, and the *Journal of Anatomy and Physiology,* vols. 15, 24, 30. Many of the specimens from which these accounts were written were preserved in the anatomical museum at McGill, but in 1907 Shepherd suffered the heartbreaking experience of seeing that fruit of thirty years' labour destroyed by fire. His early work on anomalies formed the basis of an article on "The significance of human anomalies" (*Pop. Sci. Monthly,* vol. 25); it also led to his being assigned the authorship of the sections on the anomalies of muscles and of veins in the first section of Wood's "Reference Handbook of the Medical Sciences", edited by A. H. Buck. Both these are scholarly, judicious summaries of knowledge, illustrated with many figures, both original and borrowed from the literature. To the same work he contributed the article on the surgical anatomy of the axilla.

He published accounts of the dissection of a number of specimens, describing accurately the anatomy of certain conditions of surgical interest. These were: "Congenital dislocation of the head of the femur" (*J. Anat. & Physiol.,* vols. 14, 15); "Cervical rib" (*Am. J. M. Sc.,* vol. 85); and "Lumbar hernia" (*Ann. Surg.,* vol. 16). Mention should perhaps be made here of his operation on a case of atresia ani, successfully performed in 1884 (when Shepherd was thirty-three), and reported in the *Edinburgh Medical Journal,* vol. 30; Dr. Howell notes that "In view of the rarity of success in such operations even now, this was a sufficiently remarkable performance." Without doubt Shepherd's knowledge of anatomy, normal and anomalous, contributed toward his success as an operator, both directly, and indirectly by augmenting his natural courage and confidence.

Having been invited to become a charter member of the Association of American Anatomists in 1888, two years later he read before that body a paper on the radio-carpal joint, which appeared in the *Journal of Anatomy and Physiology,* vol. 25. Although most of the textbooks of the time omitted the point, Shepherd had observed (while looking for perforations of the disc) the scaphoid to articulate not only with the radius, but also, to a slight and variable extent, with the disc which separates it from the ulna. He later found that Henle and others had noted the same thing, but he considered it worth re-stating and emphasizing. In vol. 27 of the *Journal of Anatomy and Physiology* he published a paper on "Symmetrical depressions on the exterior surface of the parietal bones (with notes of three cases)", two dissecting-room specimens and one patient; in the light of the observations of himself and of others, he attributed the condition to necrosis of the outer table from senile changes in the temporal arteries, thus considering it pathological rather than anomalous. We shall see Shepherd facing the same alternatives in another connection.

In vol. 18 of the *Journal of Anatomy and Physiology* he published a descriptive account of the dissection of the musculature of a single specimen of the American black bear (*Ursus americanus*). This was his most extensive single anatomical research—single in the sense of being accomplished *en bloc.* On the subjects discussed next he made scattered observations extending over some years.

In vol. 17 of the *Journal of Anatomy and Physiology,* Shepherd published a paper bearing the title "A hitherto undescribed fracture of the astragalus", comprising a descriptive account of several dissecting-room specimens. The part fractured was "the little process of bone external to the groove for the tendon of the flexor hallucis longus." He considered the possibility of this being a separated epiphysis, but dismissed it, concluding that the condition was a fracture, and discussing its possible surgical significance. In view of his conclusion it seems odd that he should send the paper to an anatomical journal; possibly he did so because it was based upon dissecting-room specimens. But it proved, in a way, fortunate that he brought the matter to the attention of anatomists, for Professor Turner, of Edinburgh, who was one of the editors of the journal, followed Shepherd's paper with a note in the same issue describing a similar specimen from the dissecting-room at Edinburgh University, expressing the opinion that Shepherd's "fracture" was a separate ossicle, and pointing out that this ossicle had been described in the 1880's by Gruber and by Stieda, the former having worked out the details of its ossification and variations. Vol. 19 of the same journal contained a review of von Bardeleben's work on the skeleton of the hand and foot; he called the ossicle the *os trigonum,* and studied its development and morphology. Vol. 21 contained an article by Dr. E. H. Bennett, Professor of Surgery in the University of Dublin, describing a number of such specimens, discussing the whole matter rather thoroughly from a surgical viewpoint, and concluding the affair to be an ossicle, not a fracture. In the

same volume Mr. Bland Sutton and Sir William Turner each described another specimen, and considered it an ossicle. With this array of anatomical and surgical opinion against him, Shepherd made further observations, the outcome of which was thus stated by him (*J. Anat. & Physiol.*, vol. 21); "Further investigation of the subject has led me to reject the theory that the ossicle found at the posterior border of the astragalus is due to fracture; I am now convinced that it is an ununited epiphysis, and has an origin from a separate centre of ossification." Indeed, at the Montreal meeting of the British Association for the Advancement of Science in 1894 he recorded three specimens under the title "secondary astragalus". The frankness of his recantation shows that what Dr. Howell calls Shepherd's "contradictiousness" could yield to his intellectual honesty.

The latter point is also illustrated, though perhaps less dramatically, in his work on the sternalis. He observed an example of this anomalous muscle during the session of 1880-81 and another in 1882-83. He became interested in its morphology, and in his article on "The significance of human anomalies" (*Pop. Sci. Monthly*, vol. 25) he clearly indicated his opinion that it was a derivative of the *panniculus carnosus*. In his Academy of Medicine in Ireland paper (referred to below) he stated that he expressed the same view at the Montreal meeting of the British Association for the Advancement of Science in 1884. I have found no record of this in the Report of the Association for that year; probably it was merely voiced in the discussion of Professor Cunningham's paper "On the value of nerve supply in the determination of muscular anomalies." Though it is not recorded in the printed abstract of Cunningham's paper, Shepherd also stated (in his Academy of Medicine in Ireland paper) that Cunningham had mentioned that Mr. Abraham, of Dublin, had found the sternalis in six of eleven anencephali examined. Shepherd thereupon dissected six anencephali preserved in the McGill Museum, and found a sternalis in every one! His studies of the nerve supply in these specimens led him to abandon his opinion that it was a panniculus derivative, and to embrace Cunningham's view that it was of pectoral origin. The paper embodying these results he sent to Professor Cunningham, (then at Trinity College, Dublin), who read it before the Academy of Medicine in Ireland, a brief summary appearing in the *British Medical Journal* for April 25, 1885, and the illustrated paper in vol. 3 of the *Transactions* of the Academy, also in vol. 19 of the *Journal of Anatomy and Physiology*. In a subsequent paper, in vol. 22 of the latter journal, Cunningham, surveying the problem of the morphology of the sternalis, evinced just appreciation of Shepherd's work. Partly in reply to a paper by Bardeleben (*Anat. Anz.*, Bd. 3), Shepherd published his last word on the sternalis in the *Journal of Anatomy and Physiology*, vol. 23; this consisted of an account of two more instances of a sternalis in anencephali, together with a discussion of the nerve supply and morphology of the muscle.

Thus, while Shepherd's additions to anatomical *knowledge* were considerable, especially in the field of anomalies, his contribution to anatomical *science* was virtually limited to his work on the morphology of the sternalis and of the os trigonum, on both of which his original ideas were proved erroneous. Clearly, he was an enthusiastic investigator in his early years, but he retained only his practical interest in teaching the subject, for his last strictly anatomical paper was published in 1895, whereas his clinical writing continued unabated until his retirement nearly twenty years later. Though possessed of the intellectual capacity and keenness for fine research, Shepherd found his emotional satisfaction in teaching, in clinical work, and in the rôle of art critic. The effect upon his research was inevitable. He was astute enough to realize this clearly; witness the following quotation (in Dr. Howell's book) from a letter written by him in 1884 (the year after his appointment as professor of anatomy): "I may devote myself to anatomy altogether, which would suit my taste. . . If I could get $4,000 a year for anatomy I would do nothing else, *and be able to accomplish much more original work*. . . As it is, I fear I shall be forced into surgery—which I like well and am fairly successful at, but anatomy is my hobby. In this country anatomists are scarce and not appreciated as they should be." (Italics mine). Evidence of his realization nearly twenty years later that his surgery thwarted his development as anatomist may be seen in the circumstance that about 1902 or 1903, when at the height of his surgical powers, so seriously did he consider resigning the professorship of anatomy that he actually wrote to Sir William Turner, of Edinburgh, concerning a possible successor, but nothing came of it, and he retained the chair for a further ten years.

Shepherd revolutionized the teaching of anatomy at McGill. He was instrumental in improving the Anatomy Act of the Province of Quebec, providing a proper supply of material. He designed two departments of anatomy at McGill—one in the Medical Building opened in 1895 and destroyed by fire in 1907, the other in the Medical Building opened in 1911 and in present use. The following quotation from Dr. Howell's book may serve to indicate the main features of Shepherd's training. "The place to learn anatomy was the dissecting room; the way to learn it was by hard work. He and his demonstrators would see to it that for two years every nose was pressed ruthlessly to the grindstone. But there was a place for lectures too; they would give him an opportunity to help the students to coordinate the facts they had

learned in the dissecting-room, to show them the practical application of anatomy to medicine and surgery; and perhaps to communicate to them some of his own enthusiasm for a subject of enthralling interest." Sir Auckland Geddes, who succeeded Shepherd in the chair of anatomy at McGill, and afterwards became British Ambassador to the United States, related that when he was assistant to Professor Cunningham in Edinburgh he once asked Cunningham why the McGill men who went to Edinburgh always seemed to know their anatomy, in contrast to men from so many other schools; Cunningham replied, "You don't know Shepherd!"

Undoubtedly Shepherd's teaching changed. At first, while still an active investigator, his teaching showed this. Dr. Howell quotes the following statement by Dr. John Struthers, Professor of Anatomy in the University of Aberdeen, upon his return from the Montreal meeting of the British Association for the Advancement of Science in 1884: McGill's "museums are fair, and in regard to the teaching, in which I am specially interested, it was pleasant to see that the able professor of anatomy, Dr. Shepherd, regarded his subject from the scientific aspect, instead of treating it from the mere professional point of view, as it is too commonly treated in medical schools." Latterly, however, when he had ceased to be himself an active student of anatomical problems, his interest in the teaching of anatomy, though no whit less keen, was that of the surgeon rather than of the anatomist: he was no longer teaching his own subject. Nevertheless, his teaching retained the supreme virtue that its foundation was dissection by the student himself, who thus received an excellent training in first-hand observation; Shepherd did not merely teach his students, he educated them.

Though not himself a full-time anatomist, Shepherd believed that a professorship of anatomy should be a full-time appointment; hence it seems strange that (unless I am mistaken) he never had any full-time assistants. He had a long series of part-time assistants, a few of whom contributed to the literature of anatomy (*e.g.*, Tait McKenzie, J. G. McCarthy), and very many of whom became leaders in other lines of work. So far as I know, however, of all his students and assistants only two afterwards became full-time anatomists, Professor J. C. Simpson and the late Dr. F. Slater Jackson, both in histology and embryology at McGill. But all his former assistants attributed their clinical success largely to the rigorous training they received as Shepherd's demonstrators. He naturally gave them his own viewpoint, that of the surgeon-anatomist; the day of the surgeon-anatomist being over, they tended to become, even as he did, surgeons rather than anatomists. He left no anatomical disciples, for his gospel was not really that of anatomy, but of surgery.

So far at least as the English-speaking world is concerned, Shepherd was, I think, the last of the surgeon-anatomists to attain distinction as an anatomist. (By surgeon-anatomists I refer not to surgeons who were profound anatomical scholars, such as Sir Harold Stiles, but to professors of anatomy who were also surgeons.) In the '70's he inaugurated a new era in the teaching of the subject in his Alma Mater; but, so far as I know, he had little effect on anatomy in the world beyond McGill—he founded no school of anatomy. In retrospect, it would seem that in the '80's the time was ripe for the creation of a great anatomical school on this continent, and that Shepherd could have done it. But, probably partly through contentment with his early reforms, the opportunity was allowed to pass: it was recognized, seized and developed in the '90's at Johns Hopkins by Mall.

Undoubtedly Shepherd had in him the makings of a great anatomist; unfortunately this potentiality was not realized. But he was a truly distinguished teacher of anatomy. Only his opinion of Shepherd as anatomist could have made Osler think of inviting him to the professorship at Hopkins, and could have prompted this graceful statement in the note accompanying the copy of the 1543 edition of Vesalius' "Fabrica" that Osler sent to the McGill Medical Library in 1909: "I am glad to send this beautiful copy of the first edition to the library of my old school, in which anatomy has always been studied in the Vesalian spirit, with accuracy and thoroughness." Notwithstanding his achievements as surgeon and dermatologist, it is the memory of Dr. Shepherd as professor of anatomy that is most vivid and will live longest.

Association Notes

The Annual Meeting

The scientific and commercial exhibits again proved interesting and instructive features of the meeting. Owing to exigencies of space the various booths had to be located on two floors. However, this did not detract from their appearance and accessibility. Those on the ground floor were near the main entrance of the hotel and in the lounge, while those above were near the ball-room where many of the meetings were held. Accordingly, the various exhibits received the utmost possible publicity. It would appear that the Scientific Exhibit has by now become a permanent feature of our Annual Meeting.

It should be noted that awards were made, in the case of the Scientific Exhibits, for excellence. These are divided into two classes. Awards in Class I are made for exhibits of individual investigators, judged on the basis of originality and excellence of presentation. Awards in Class II are made for exhibits that do not ex-